



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/613,592	07/02/2003	Steven Kasapi	Optonics-09	7241
23493	7590	01/11/2006	EXAMINER	
SUGHRUE MION, PLLC 401 Castro Street, Ste 220 Mountain View, CA 94041-2007			LAUCHMAN, LAYLA G	
			ART UNIT	PAPER NUMBER
			2877	

DATE MAILED: 01/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

all.

Office Action Summary	Application No. 10/613,592	Applicant(s) KASAPI ET AL.	
	Examiner L. G. Lauchman	Art Unit 2877	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>7/02/2003</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 1, 2-5,13-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aitken et al (US 6,788,093), and further in view of Bruce et al (US 6,608,494).

As to claim 1, the patent '093 discloses an apparatus using real time optical signals (see Fig. 3): a test bench 302 for placing the device 810 thereupon; an adapter 301 for coupling electrically stimulating signals to said device; collection optics 300 for collecting photons emitted from said device in response to said stimulating signals; a spectrally selective element 307 for spectrally selecting said photons; and a photo counting camera 315 and an emission controller 330. The patent does not specifically disclose a time-resolved photon sensor for detecting said photons with a timing mechanism for timing the sensor detection of said photons. However, Bruce et al disclose time-resolved photoemission detection utilizing a time-to-amplitude converter (see col.5, lines 10-30). it would have been obvious to one skilled in the art at the time the invention was made to provide the detection system of Bruce et al in the apparatus of Aitken, since it would provide fast, cost effective and temporally resolved photoemission analysis.

As to Claims 13 and 14, Bruce discloses using a solid immersion lens (Col. 4, lines 29-31). it would have been obvious to one skilled in the art at the time the invention

Art Unit: 2877

was made to provide a SIL in the invention of Aitken to direct the photoemission from the device to the photon sensor.

As to Claim 15, the patent '093 discloses an apparatus using real time optical signals (see Fig. 3): a test bench 302 for placing the device 810 thereupon; an adapter 301 for coupling electrically stimulating signals to said device; collection optics 300 for collecting photons emitted from said device in response to said stimulating signals; a spectrally selective element 307 for spectrally selecting said photons; and a photo counting camera 315 and an emission controller 330. The patent does not specifically disclose a time-resolved photon sensor for detecting said photons with a timing mechanism for timing the sensor detection of said photons. However, Bruce et al disclose time-resolved photoemission detection utilizing a time-to-amplitude converter (see col.5, lines 10-30). it would have been obvious to one skilled in the art at the time the invention was made to provide the detection system of Bruce et al in the apparatus of Aitken, since it would provide fast, cost effective and temporally resolved photoemission analysis. Aitken does not teach a multimode fiber coupled to to said collection optics. Bruce teaches a fiber cable 214 (Fig. 1) and fiber optic probe 354 (Fig. 4). It would have been obvious to one skilled in the art at the time the invention was made to provide a fiber to receive the collected photons in the invention of Aitken since the fiber cable would improve optical coupling between the optics and the sensor, which would lead to more accurate measurements.

As to Claim 17, the apparatus resulting from the combination of Aitken and Bruce will perform, during its operation, the method steps recited in said claims.

Art Unit: 2877

As to Claims 2-5, 16, the combination of inventions of Aitken and Bruce teach all, as applied to claims 1 and 15. Aitken's patent discloses a spectrum analyzer, however it does not specifically teaches what type of optical spectral selective element the analyzer includes. It is well known to use filter, gratings, FTR spectrometers, in the photoemission analysis (see US 5,724,131, US 5,006,717, US 5,112,125, US 6,862,091, US 5,006,717, US 6,677,604). The selection of any of these known elements would be within the level of ordinary skill in the art on the basis of its suitability.

Claims 6-10 rejected under 35 U.S.C. 103(a) as being unpatentable over Aitken et al (US 6,788,093), and further in view of Bruce et al (US 6,608,494), as applied to Claims 1 and 3 above, and further in view of Neumann (US 5,112,125).

The combination of inventions of Aitken and Bruce teach all, as applied to claims 1 and 3, except that the sensor is a detector array, is movable spatially, 2D array, and the grating is movable. Neumann discloses a system for time-resolved spectrophotometric measurements, which includes a movable grating 11, 12, and a CCD surface array (Col. 5, lines 9-15, and Fig. 1). It would have been obvious to one skilled in the art at the time the invention was made to provide the combination of Aitken and Bruce with the grating and plurality of photodetectors in order to make all the time-resolved measurement simultaneously.

Claims 11-12 rejected under 35 U.S.C. 103(a) as being unpatentable over Aitken et al (US 6,788,093), and further in view of Bruce et al (US 6,608,494), as applied to Claims 1 and 3 above, and further in view of Tsutsu et al (US 5,006,717). The

Art Unit: 2877

combination of inventions of Aitken and Bruce teach all, as applied to claims 1 and 4, except that the filters are insertable in to the optical path. Tsutsu discloses a system for evaluating a semiconductor device by using a detachable filter 10 (see figs.1 and 3), which is be replaceable by a spectrometer 20. It would have been obvious to one skilled in the art at the time the invention was made to provide insertable filters in the combination of the inventions of Aitken and Bruce, since it would allow to increase the wavelength range of the measurements and make the apparatus more efficient.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to L. G. Lauchman whose telephone number is (571) 272-2418. The examiner's normal work schedule is 8:00am to 4:30pm (EST), Monday through Friday. If attempts to reach examiner by the telephone are unsuccessful, the examiner's supervisor Gregory J. Toatley, Jr. can be reached on (571) 272-2059, ext. 77.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Art Unit: 2877

Any inquiry of a general nature or relating to the status of this application should be directed to the TC receptionist whose telephone number is (571) 272-1562.

A handwritten signature in black ink, appearing to read "L. G. Lauchman". The signature is fluid and cursive, with a large loop at the end.

L. G. Lauchman
Primary Examiner
Art Unit 2877

January 9, 2006